TECHNICAL SUPPORT DOCUMENT

Air Discharge Permit ADP 23-3587
Air Discharge Permit Application CL-3232

Issued: June 29, 2023

Bonneville Power Administration - Ross Complex

SWCAA ID - 203

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TABLE OF CONTENTS

ABBREVIATIONS

List of Acronyms

ADP	Air Discharge Permit
ASIL	Acceptable Source Impact Level
BACT	Best available control technology
CAM	Compliance Assurance Monitoring
CAS#	Chemical Abstracts Service registry number
CFR	Code of Federal Regulations
EPA	U.S. Environmental Protection Agency
EU	Emission Unit
MACT	Maximum Achievable Control Technologies
mfr	Manufacturer
NESHAP	National Emission Standards for Hazardous Air Pollutants
NOV	Notice of Violation/
NSPS	New Source Performance Standard
PSD	Prevention of Significant Deterioration
RCW	Revised Code of Washington
SCC	Source Classification Code
SDS	Safety Data Sheet
SQER	Small Quantity Emission Rate listed in WAC 173-460
Standard	Standard conditions at a temperature of 68°F (20°C) and a pressure of 29.92 in Hg (760 mm Hg)
SWCAA	Southwest Clean Air Agency
T-BACT	Best Available Control Technology for toxic air pollutants
WAC	Washington Administrative Code

List of Units and Measures

µg/m³	Micrograms per cubic meter
acfm	Actual cubic foot per minute
bhp	Brake horsepower
dscfm	Dry Standard cubic foot per minute
gpm	Gallon per minute
gr/dscf	Grain per dry standard cubic foot
hp	Horsepower
hp-hr	Horsepower-hour
MMBtu	Million British thermal unit
ppm	Parts per million
ppmv	Parts per million by volume
ppmvd	Parts per million by volume, dry
ppmw	Parts per million by weight
scfm	Standard cubic foot per minute
tpy	Tons per year

List of Chemical Symbols, Formulas, and Pollutants

CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
HAP	Hazardous air pollutant listed pursuant to Section 112 of the Federal Clean Air Act
N_2O	Nitrous oxide
NH_3	Ammonia
NO_2	Nitrogen dioxide
NO_x	Nitrogen oxides
O_2	Oxygen
O_3	Ozone
PM	Particulate Matter with an aerodynamic diameter 100 µm or less
PM_{10}	PM with an aerodynamic diameter 10 µm or less
$PM_{2.5}$	PM with an aerodynamic diameter 2.5 µm or less
SO_2	Sulfur dioxide
SO_x	Sulfur oxides
TAP	Toxic air pollutant pursuant to Chapter 173-460 WAC
VOC	Volatile organic compound

Terms not otherwise defined have the meaning assigned to them in the referenced regulations or the dictionary definition, as appropriate.

1. FACILITY IDENTIFICATION

Applicant Name:	Bonneville Power Administration
Applicant Address:	5411 NE Hwy 99, Vancouver, Washington 98666
Facility Name:	Bonneville Power Administration - Ross Complex
Facility Address:	5411 NE Hwy 99, Vancouver, Washington 98666
SWCAA Identification:	203
Contact Person:	Andrew Chang, Physical Scientist
Primary Process:	Electric Power Transmission and Control
SIC/NAICS Code:	4911 / Electric Services 221121 / Electric Bulk Power Transmission and Control
Facility Classification:	Natural Minor

2. FACILITY DESCRIPTION

The Ross Complex, located at 5411 NE Hwy 99 in Vancouver, Clark County, Washington, is a federal government-owned facility operated by the Bonneville Power Administration (BPA) under the general direction of the U.S. Department of Energy (DOE). The Ross Complex distributes hydroelectric power from hydroelectric dams on the Columbia River and serves as the control center for the generation and transmission of electricity throughout the Pacific Northwest. Since its construction in 1939, the Ross Complex has served as a headquarters for research and testing, maintenance, construction, and operations activities, and waste handling and storage facilities for BPA. Also located at the facility are a fully operational electrical substation, warehousing operations, and an Investment Recovery Center (excess equipment sales).

3. CURRENT PERMITTING ACTION

This permitting action is in response to Air Discharge Permit application number CL-3232 (ADP Application CL-3232) dated March 29, 2023. BPA submitted ADP Application CL-3232 requesting approval of the following:

- Installation of a new powder coat booth (Rohner / BPB-CM10000-10-10-15);
- Installation of a new powder coat oven (Rohner / BOTH-SLWP-9-9-12-TMI-SE);
- Installation of two new diesel fired emergency generators (Kohler / 400REOZJD);
- Incorporation of two previously unpermitted makeup air units (Blast Room, Large Paint Booth); and
- Consolidation of requirements from ADP 05-2631.

The current permitting action provides approval for new emission units as proposed in ADP Application CL-3232. ADP 23-3587 will supersede ADP 15-3141 and ADP 05-2631 in their entirety.

4. PROCESS DESCRIPTION

The Ross Complex is a general services facility located at 5411 NE Hwy 99 in Vancouver, Clark County, Washington. The facility is owned and operated by the U.S. Department of Energy – Bonneville Power Administration. The Ross Complex facility is responsible for high voltage transmission and electrical power grid control in the northwest United States, and maintains and installs electrical transmission equipment in the surrounding area. The facility contains several buildings that are used for maintaining facility vehicles, rebuilding equipment, painting equipment, laboratory analysis and the refurbishment of various electrical components.

5. EQUIPMENT/ACTIVITY IDENTIFICATION

5.a Building Z-992 Generator Engine A (*existing*). This engine drives a generator that provides emergency electrical power to computer systems housed in Building Z-992. (*Designated as "Building Z-992 Generator Engine #1" prior to 2009*)

Engine Make / Model:	Cummins / QSX15-G9 (s/n 6070078201)
Power Rating:	755 bhp (standby)
Fuel Type:	Diesel
Mfg Date / Certification:	June 26, 2007 / Tier 2
NSPS/MACT Applicable:	IIII / ZZZZ
Generator Make / Model:	Cummins / DFEK (s/n S210570-07)
Generator Capacity:	500 kW

5.b Building Z-992 Generator Engine B (*existing*). This engine is used to drive a generator that provides emergency electrical power to computer systems housed in Building Z-992. *(Designated as "Building Z-992 Generator Engine #2" prior to 2009)*

Engine Make / Model:	Cummins / QSX15-G9 (s/n 6070078202)
Power Rating:	755 bhp (standby)
Fuel Type:	Diesel
Mfg Date / Certification:	June 26, 2007 / Tier 2
NSPS/MACT Applicable:	IIII / ZZZZ
Generator Make / Model:	Cummins / DFEK (s/n S2105070-03)
Generator Capacity:	500 kW


Generator Engine A


Generator Engine B

5.c Generator Set TG-1 (*existing*). One generator set powered by a Solar Saturn model #GS-1000 diesel fired turbine. The engine is a T-1000 diesel turbine rated at 1,000 hp with a fuel consumption rate of 1 gallon per minute at maximum load. The generator is rated at 800 kW and 1,000 KVA at maximum load. The generator set has a power factor of 0.8. This unit was installed in May of 1973 and provides partial emergency backup for the facility.

5.d Generator Set TG-2 (*existing*). One generator set powered by a Solar Saturn model #GS-1000 diesel fired turbine. The engine is a T-1000 diesel turbine rated at 1,000 hp with a fuel consumption rate of 1 gallon per minute at maximum load. The generator is rated at 800 kW and 1,000 KVA at maximum load. The generator set has a power factor of 0.8. This unit was installed in June of 1974 and provides partial emergency backup for the facility.


Generator Set TG-1


Generator Set TG-2

5.e Generator Set TG-3 (*existing*). One generator set powered by a Solar Saturn model #GS-1000 diesel fired turbine. The engine is a T-1000 diesel turbine rated at 1,000 hp with a fuel consumption rate of 1 gallon per minute at maximum load. The generator is rated at 800 kW and 1,000 KVA at maximum load. The generator set has a power factor of 0.8. This unit was installed in February of 1977 and provides partial emergency backup for the facility.


Generator Set TG-3


MultiQuip Generator

5.f MultiQuip Generator Engine (*existing*). One MultiQuip Power model #EGC1500V diesel engine driven generator set (s/n 2160040886). This unit is located at Building Z-992.

Engine Make / Model:	Volvo Penta / TAD 1631GE (s/n 2160040886)
Power Rating:	658 bhp
Fuel Type:	Diesel (32 gal/hr)
Mfg Date / Certification :	2001 / EPA Tier 1
NSPS/MACT Applicable:	ZZZZ
Generator Make / Model:	Magnamax / 572RSL4027 (s/n WA-526967-0301)
Generator Capacity:	475 kW

5.g Warehouse Generator Engine (*existing*). This diesel engine driven generator set provides emergency electrical power to the warehouse.

Engine Make / Model:	Caterpillar / 3412DIT (s/n 81Z21067)
Power Rating:	749 bhp (standby)
Fuel Type:	Diesel
Mfg. Date / Certification:	1997 / None
NSPS/MACT Applicable:	ZZZZ
Generator Make / Model:	Caterpillar (s/n 5NA10785)
Generator Capacity:	500 kW

Warehouse Generator Engine

5.h Technical Services Building Generator Engine A (*new*). This diesel engine driven generator set provides emergency electrical power to the Technical Services Building.

Engine Make / Model:	John Deere / 6135HFG84A (s/n RG6135L041368)
Power Rating:	617 bhp
Fuel Type:	Diesel (@30.9 gph)
Mfg. Date / Certification:	2022 / Tier 3
NSPS/MACT Applicable:	IIII / ZZZZ
Generator Make / Model:	Kohler / 400REOZJD
Generator Capacity:	410 kW
Exhaust Configuration:	4" dia stack, vertical at ~10' above grade

ADP Application CL-3232. BPA is installing two new emergency generators to provide emergency electrical power to the new Technical Services Building.

5.i Technical Services Building Generator Engine B (*new*). This diesel engine driven generator set provides emergency electrical power to the Technical Services Building.

Engine Make / Model:	John Deere / 6135HFG84A (s/n RG6135L041374)
Power Rating:	617 bhp
Fuel Type:	Diesel (@30.9 gph)
Mfg. Date / Certification:	2022 / Tier 3
NSPS/MACT Applicable:	IIII / ZZZZ
Generator Make / Model:	Kohler / 400REOZJD
Generator Capacity:	410 kW
Exhaust Configuration:	4" dia stack, vertical at ~10' above grade

ADP Application CL-3232. BPA is installing two new emergency generators to provide emergency electrical power to the new Technical Services Building.

5.j Refueling Facility (*existing*). This unit is an onsite fueling station used to fuel fleet vehicles with diesel, gasoline, and E85. This refueling station is equipped with Stage I vapor recovery for both the E85 and gasoline storage tanks, and Stage II vapor recovery for the gasoline dispensing equipment. The E85 and gasoline storage tanks have a capacity of 10,000 gallons each.


Diesel/Gasoline Refueling Station

E85 Refueling Station

5.k Blast Room (*modified*). One enclosed Clemco Industries Corp. abrasive blasting room measuring 43' in length, 32' in width, and 22' high. The blasting room is equipped with two stages of particulate control as described below. The blasting room exhaust system is rated at 70,000 cfm @ 10" w.c. A dedicated makeup unit is used to temper incoming air.

Primary Particulate Control. The first stage of particulate control for the Blast Room is a dedicated dust collector.

Make / Model:	Farr / GS-60
Filtration Media:	Woven polyurethane (99.5% efficiency @ ≥5.0 microns)
Filtration Area:	450 ft^2
Cleaning System:	Reverse pulse jet

Secondary Particulate Control. The second stage of particulate control for the Blast Room is a single bank of filters.

Make / Model:	Farr / 1XT-242412
Filtration Media:	HEPA rated spun fiber (99.97% efficiency @ ≥0.3 microns)
Filtration Area:	36 pleated filters (144 ft^2 face area)
Exhaust Configuration:	12' x 12' horizontal wall vent, at ground level

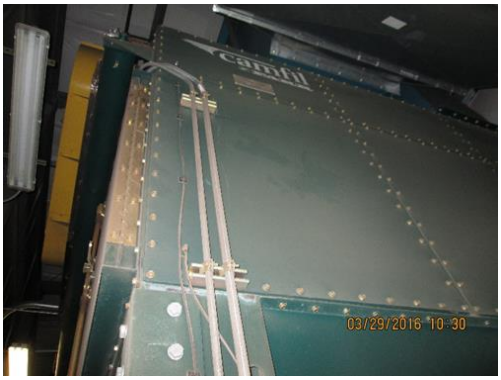
Makeup Air Unit.

Make / Model:	Titan
Heat Input Rating:	2.145 MMBtu/hr
Fuel:	Natural Gas
Installation Date:	2009
Exhaust Configuration:	Horizontal at ~2' above roof level

The following support equipment operates in support of abrasive blasting operations:

- One AWAC airwash separator with a 20" screen drum.
- One 56 ft^3 blasting media storage hopper.
- Two 6 ft^3 blast pots.
- Two sets of blast hoses and nozzles.
- Two reclaim screw conveyors.
- Two material screw conveyors.
- One cross screw conveyor.
- One Clemco bucket elevator.
- One Twin City Fan & Blower type BCS fan (8a & 8b), rated at 150 hp.

ADP Application CL-3232. BPA identified an unpermitted makeup air unit operating in support of the Blast Room. The unit appears to have been installed in 2009. The unit will be incorporated as part of this permitting action.



Blast Room Dust Collector


Blast Room Filter Bank

5.l Large Paint Booth (*modified*). One paint room/booth configured with downdraft floor vents. The paint booth is exhausted at 30,000 acfm through (24) RP filters measuring 16"x 25" x 3" each. The exhaust system is equipped with a 25 hp motor and 30" fan operating at 1,765 rpm. This unit is primarily used for spray coating operations. However, BPA occasionally (*2-4 times per year*) performs zinc metalizing activities in the booth. (*see 2008 email regarding metalizing*). A dedicated makeup unit is used to temper incoming air.

Makeup Air Unit.

Make / Model:	Titan
Heat Input Rating:	2.145 MMBtu/hr
Fuel:	Natural Gas
Installation Date:	2009
Exhaust Configuration:	Horizontal at ~2' above roof level

ADP Application CL-3232. BPA identified an unpermitted makeup air unit operating in support of the Large Paint Booth. The unit appears to have been installed in 2009. The unit will be incorporated as part of this permitting action.

5.m Small Paint Booth (removed). One paint room/booth configured with downdraft floor vents. The paint booth is exhausted at 30,000 acfm through 12 RP filters measuring 16" x 25" x 3" each. The exhaust system is equipped with a 25 hp motor and a 30" fan operating at 1,765 rpm.

ADP Application CL-3232. BPA permanently removed the small paint booth from service in 2021.

5.n Aluminum Brightener/Degreasing Tank (*existing*). One (1), Aluminum brightener/degreasing tank approved by SWCAA 82-646, when it is in use it is exhausted at 1,500 acfm to atmosphere. This tank contains a chemical product called Dazzler that is used to clean aluminum parts.

5.o Tinning Tank (*existing*). One (1), Tinning tank approved by SWCAA 82-646, when it is in use it is exhausted at 1,500 acfm to atmosphere. This tank contains a chemical product called Johnson's soldering fluid that is used to clean metal parts.

Brightener/Degreasing Tank


Tinning Tank

5.p Welding Operations (*existing*). This facility performs small amounts of maintenance and fabrication welding. Welding primarily occurs in the Plant Services Building (Z-671) and the Vehicle Maintenance Garage (Z-991). Welding fumes may be discharged from three separate stacks in the Plant Services Building (Each stack measures 8" in diameter. Two stacks exhaust 21" above the building roof. One stack exhausts 27" above the building roof). The Plant Services Building roof is 20' above grade. Welding fumes generated in the Vehicle Maintenance Garage are discharged through at 20" diameter stack at approximately 9-10 feet above the building roof. The vehicle maintenance garage roof is 20' above grade.

5.q TB3060 Sander Station (*existing*). One stand-alone sander station located in the Plant Services Building. The sander station is used to grind/polish small aluminum parts.

Make / Model:	Dual Draw / TB3060 (s/n 99016)
Dimensions:	80" high x 60" long x 30" wide
Exhaust Rate:	2,500 acfm
Emission Control:	Two stage filtration (1st Stage - MERV 7. 2nd Stage - MERV 14)
Filtration Media / Area:	(2) - 24" x 24" x 4" pleated filters (148 ft^2 total filtration area)
Exhaust Configuration:	10" dia stack, vertical at 26.5' above grade (6’ above roof)

5.r TB3096 Sander Station (*existing*). One double width sander station located in the Plant Services Building. The sander station is used to grind/polish small aluminum parts.

Make / Model:	Dual Draw / TB3096 (s/n 101020)
Dimensions:	80" high x 96" long x 30" wide
Exhaust Rate:	2 blowers @ 2,500 acfm each (5,000 acfm total)
Emission Control:	Two stage filtration (1st Stage - MERV 7. 2nd Stage - MERV 14)
Filtration Media / Area:	(4) - 24" x 24" x 4" pleated filters (296 ft^2 total filtration area)
Exhaust Configuration:	(2) 10" dia stacks, vertical at 26.5' above grade (6' above roof)


TB3060 Sander Station


TB3096 Sander Station

5.s Powder Coating (*new*). This operation is used to apply powder coatings to small, prepared parts. The powder coating operation is located in the Plant Services Building (Z-671). The powder coating booth discharges within the building and emissions are considered negligible.

Powder Coat Booth.

Make / Model:	Rohner / BPB-CM10000-10-10-15
Dimensions:	10' high x 15' long x 10' wide
Exhaust Rate:	10,000 acfm
Filtration Media:	Cellulose/polyester cartridges (99.9% efficiency)
Filtration Area:	(10) pleated filters per stage (2,540 ft^2 total area)
Installation Date:	2021
Exhaust Configuration:	Vents inside building

Powder Coat Oven.

Make / Model:	Rohner / BOTH-SLWP-9-9-12-0
Dimensions:	9' high x 12' long x 9' wide
Heat Input Rating:	1.0 MMBtu/hr
Fuel:	Natural Gas
Emissions:	100 ppmv NO_X / 50 ppmv CO (@3% O_2)
Installation Date:	2021
Exhaust Configuration:	12" dia stack, vertical at ~26' above ground level (6' above roof)

ADP Application CL-3232. BPA installed a powder coating operation as a replacement for the existing small spray booth. Installation was completed in late 2021. BPA did not submit a permit application at the time of installation. NOV #10623 was issued in response to the installation.


Powder Coat Booth


Powder Coat Oven

Other Equipment

5.t Chemistry Laboratory (including PCB Annex). Eight exhaust hoods vent the main laboratory to ambient air. Two exhaust hoods vent the PCB Annex to the ambient air. Laboratory activities primarily consist of gas and oil testing for transformers.

5.u Solvent Reclamation Still. CB Mills, Red Head Model #Micro 15-LV-AF (s/n 98-SR-0728-02). This unit is used to recover solvents used in painting operations.

5.v Vehicle Maintenance Garage Painting. Small amounts of paint (~10 gallons per year) is applied using aerosol cans in the vehicle maintenance garage.

5.w Equipment/Activity Summary.

ID No.	Generating Equipment/Activity	Control Measure/Equipment
1	Building Z-992 Generator Engine A (Cummins – 755 bhp)	EPA Tier 2 Ultra-low Sulfur Diesel
2	Building Z-992 Generator Engine B (Cummins – 755 bhp)	EPA Tier 2 Ultra-low Sulfur Diesel
3	Generator Set TG-1 (Solar – 1,000 hp)	None
4	Generator Set TG-2 (Solar – 1,000 hp)	None
5	Generator Set TG-3 (Solar – 1,000 hp)	None
6	MultiQuip Generator Engine (Volvo – 658 bhp)	EPA Tier 1 Ultra-low Sulfur Diesel
7	Warehouse Generator Engine (Caterpillar – 749 bhp)	Ultra-low Sulfur Diesel
8	Technical Services Building Generator Engine A (Deere – 617 bhp)	EPA Tier 3 Ultra-low Sulfur Diesel

ID No.	Generating Equipment/Activity	Control Measure/Equipment
9	Technical Services Building Generator Engine B (Deere – 617 bhp)	EPA Tier 3 Ultra-low Sulfur Diesel
10	Refueling Facility	Stage I Vapor System (gasoline/E85), Stage II Vapor System (gasoline only)
11	Blast Room / Makeup Air Unit (70,000 acfm / 2.145 MMBtu/hr)	Process Enclosure, Primary/Secondary Fabric Filtration, Low Sulfur Fuel (Natural Gas)
12	Large Paint Booth / Makeup Air Unit (60,000 acfm / 2.145 MMBtu/hr)	Process Enclosure, High Efficiency Particulate Filtration, Low Sulfur Fuel (Natural Gas)
13	Aluminum Brightener/Degreasing Tank	None
14	Tinning Tank	None
15	Welding Operations	Process Enclosure
16	TB3060 Sander Station	Process Enclosure, High Efficiency Particulate Filtration
17	TB 3096 Sander Station	Process Enclosure, High Efficiency Particulate Filtration
18	Powder Coating Operation (Rohner – 1.0 MMBtu)	Process Enclosure, High Efficiency Particulate Filtration, Low Sulfur Fuel (Natural Gas)

6. EMISSIONS DETERMINATION

Emissions to the ambient atmosphere from facility operations, as proposed in ADP Application CL-3232, consist of nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), particulate matter (PM) sulfur dioxide (SO_2), toxic air pollutants (TAPs), and hazardous air pollutants (HAPs).

Unless otherwise specified by SWCAA, actual emissions must be determined using the specified input parameter listed for each emission unit and the following hierarchy of methodologies:

(a) Continuous emissions monitoring system (CEMS) data;
(b) Source emissions test data (EPA reference method). When source emissions test data conflicts with CEMS data for the time period of a source test, source test data must be used;
(c) Source emissions test data (other test method); and
(d) Emission factors or methodology provided in this TSD.

6.a Building Z-992 Generator Engines A and B (*existing*). Potential emissions from engine operation are calculated based on 200 hours per year of operation at full rated load (755 hp), the use of ultra-low sulfur diesel (<0.0015% sulfur by weight), and a maximum fuel rate of 34.7 gallons per hour. Sulfur oxide emissions are estimated using mass balance methodology, assuming all fuel sulfur is converted to sulfur dioxide. Annual emissions will be calculated from actual hours of operation using the emission factors identified below.

Hours of Operation =	200	hours	*Each Engine*
Power Output =	755	horsepower	
Fuel Sulfur Content =	0.0015	% by weight	
Fuel Consumption Rate =	34.7	gal/hr	
Fuel Heat Content =	0.138	MMBtu/gal (40 CFR 98)	

Pollutant	EF lb/hr	Emissions tpy	EF Source
NO_X	8.07	0.81	EPA Certification Data
CO	0.52	0.052	EPA Certification Data
VOC	0.18	0.018	EPA Certification Data
SO_X as SO_2	0.0075	7.50E-04	Mass Balance
$PM/PM_{10}/PM_{2.5}$	0.083	8.30E-03	EPA Certification Data

	kg/MMBtu	EF lb/MMBtu	lb/gallon	Emissions tpy	
CO_2e	73.9636	163.61	22.58	78	40 CFR 98

6.b Generator Sets TG-1, TG-2, TG-3 (*existing*). Potential emissions from turbine operation are calculated based on 500 hours per year or operation at full rated load (1,000 hp), the use of ultra-low sulfur diesel (<0.0015% sulfur by weight), and a maximum fuel rate of 60.0 gallons per hour. Sulfur oxide emissions are estimated using mass balance methodology, assuming all fuel sulfur is converted to sulfur dioxide. Annual emissions will be calculated from actual hours of operation using the emission factors identified below.

Hours of Operation =	500	hours	*Each Turbine*
Power Output =	1,000	horsepower	
Fuel Sulfur Content =	0.0015	% by weight	
Fuel Consumption Rate =	60.0	gal/hr	
Fuel Heat Content =	0.138	MMBtu/gal (40 CFR 98)	

Pollutant	EF lb/1,000 gal	Emissions lb/hr	tpy	EF Source
NO_X		4.89	1.22	Solar
CO		5.09	1.27	Solar
VOC	0.057	3.42E-03	8.55E-04	AP-42, Section 3.1 (4/00)
SO_X as SO_2		0.013	0.0032	Mass Balance
$PM/PM_{10}/PM_{2.5}$	1.668	0.100	0.025	AP-42, Section 3.1 (4/00)
Formaldehyde	3.89E-02	2.34E-03	5.84E-04	AP-42, Section 3.1 (4/00)

	kg/MMBtu	EF lb/MMBtu	lb/gallon	Emissions tpy	
CO_2e	73.9636	163.61	22.58	339	40 CFR 98

6.c MultiQuip Generator Engine (*existing*). Potential emissions from engine operation are calculated based on 200 hours per year of operation at full rated load (658 hp), the use of ultra-low sulfur diesel (<0.0015% sulfur by weight), and a maximum fuel rate of 33.0 gallons per hour. Sulfur oxide emissions are estimated using mass balance methodology, assuming all fuel sulfur is converted to sulfur dioxide. Annual emissions will be calculated from actual hours of operation using the emission factors identified below.

Hours of Operation =	200	hours
Power Output =	658	horsepower
Fuel Sulfur Content =	0.0015	% by weight
Fuel Consumption Rate =	33.0	gal/hr
Fuel Heat Content =	0.138	MMBtu/gal (40 CFR 98)

	Emissions		
Pollutant	lb/hr	tpy	EF Source
NO_X	9.14	0.91	Manufacturer
CO	0.58	0.058	Manufacturer
VOC	0.58	0.058	Manufacturer
SO_X as SO_2	0.0071	7.13E-04	Mass Balance
$PM/PM_{10}/PM_{2.5}$	0.29	0.029	Manufacturer

	EF		Emissions		
	kg/MMBtu	lb/MMBtu	lb/gallon	tpy	
CO_2e	73.9636	163.61	22.58	75	40 CFR 98

6.d Warehouse Generator Engine (*existing*). Potential emissions from engine operation are calculated based on 200 hours per year of operation at full rated load (749 hp), the use of ultra-low sulfur diesel (<0.0015% sulfur by weight), and a maximum fuel rate of 40.42 gallons per hour. Sulfur oxide emissions are estimated using mass balance methodology, assuming all fuel sulfur is converted to sulfur dioxide. Annual emissions will be calculated from actual hours of operation using the emission factors identified below.

Hours of Operation =	200	hours
Power Output =	749	horsepower
Fuel Sulfur Content =	0.0015	% by weight
Fuel Consumption Rate =	40.4	gal/hr
Fuel Heat Content =	0.138	MMBtu/gal (40 CFR 98)

	Emissions		
Pollutant	lb/hr	tpy	EF Source
NO_X	14.57	1.46	Caterpillar
CO	0.55	0.055	Caterpillar
VOC	0.060	0.006	Caterpillar
SO_X as SO_2	8.74E-03	8.74E-04	Mass Balance
$PM/PM_{10}/PM_{2.5}$	0.68	0.068	Caterpillar

	EF		Emissions	
	kg/MMBtu	lb/MMBtu	lb/gallon	tpy	
CO_2e	73.9636	163.61	22.58	91	40 CFR 98

6.e Technical Services Building Generator Engines A and B (*new*). Potential emissions from engine operation are calculated based on 200 hours per year of operation at full rated load (617 hp), the use of ultra-low sulfur diesel (<0.0015% sulfur by weight), and a maximum fuel rate of 30.9 gallons per hour. Sulfur oxide emissions are estimated using mass balance methodology, assuming all fuel sulfur is converted to sulfur dioxide. Annual emissions will be calculated from actual hours of operation using the emission factors identified below.

Hours of Operation =	200	hours	*Each Engine*
Power Output =	617	horsepower	
Fuel Sulfur Content =	0.0015	% by weight	
Fuel Consumption Rate =	30.9	gal/hr	
Fuel Heat Content =	0.138	MMBtu/gal (40 CFR 98)	

	Emissions		
Pollutant	lb/hr	tpy	EF Source
NO_X	3.61	0.36	EPA Certification Data
CO	1.52	0.15	EPA Certification Data
VOC	0.18	0.018	EPA Certification Data
SO_X as SO_2	0.0067	6.70E-04	Mass Balance
$PM/PM_{10}/PM_{2.5}$	0.13	0.013	EPA Certification Data

	EF		Emissions	
	kg/MMBtu	lb/MMBtu	lb/gallon	tpy	
CO_2e	73.9636	163.61	22.58	70	40 CFR 98

6.f Refueling Facility (*modified*). Potential VOC emissions from the underground storage tanks fuel delivery, and fuel dispensing are calculated from a maximum throughput of 200,000 gallons per year using emission factors from the California Air Resources Board December 23, 2013 document "Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities." Fuel throughput may be either gasoline or E85. Annual emissions will be calculated based on actual fuel throughput using the same methodology.

Emission Source	VOC EF (lb/1,000 gal)
Loading – Stage I Controlled (non-EVR)	0.380
Breathing – Controlled with P/V Valve	0.092
Uncontrolled Refueling – Stage II uncontrolled (non ORVR Vehicles, no Stage II)	0.84[1]
Controlled Refueling (ORVR vehicles, no Stage II)	0.151[2]
Spillage (conventional nozzles)	0.610
Hose Permeation (regular hoses)	0.062
Total	2.135

[1] Based on 90% of the gasoline being dispensed to vehicles equipped with carbon canisters (ORVR). The base emission factor, assuming no ORVR vehicles, is 8.400 lb/1,000 gallons. 10% of the vehicles are not equipped with ORVR: 8.4 lb/1,000 gallons * (1-0.90) = 0.84 lb/1,000 gallons.

[2] This is the amount of vapor released during refueling that is attributable to those vehicles equipped with carbon canisters (ORVR) assuming carbon canisters provide for 98% control. 8.400 lb/1,000 gallons * 90% of gas dispensed to vehicles with ORVR * (2% of vapors not captured by the canister) = 0.151 lb/1,000 gallons.

The above calculations assume that 90% of the fuel is dispensed to vehicles equipped with onboard refueling vapor recovery (ORVR). SWCAA believes this level of compliance was achieved in Clark County in 2020 and will be met a few years later in Cowlitz, Lewis, Skamania, and Wahkiakum counties.

In addition to fueling emissions, the aboveground storage tank will have standing loss emissions due to temperature fluctuations that are small enough to be neglected for the underground storage tanks. Standing loss emissions were assumed to be equal to 0.57 lb/1,000 gallons of ullage per day, which is the emission certification level for CARB Executive Order VR-302-B "Standing Loss Control Vapor Recovery System for New Installations of Aboveground Storage Tanks." Assuming the aboveground storage tank is generally half full (5,000 gallons of ullage), annual emissions would be 1,040 pounds per year (0.57 lb/1,000 gal*5,000 gal*365 dy/yr). With a gasoline throughput of 200,000 gallons per year, the total VOC emission factor would be 7.34 lb/1,000 gallons (2.135 lb/1,000 gal + 1,040 lb/yr/200,000 gal/yr*1,000).

Based on EPA Speciate 3.2 profile number 2455, approximately 50.0% of the total VOC emissions from gasoline are toxic air pollutants (TAPs) as defined by WAC 173-460, and approximately 12.9% of the total VOC emissions from gasoline are federally listed hazardous air pollutants (HAPs). Calculations assume that 85% of vapor above the E85 blend is ethanol. This is a conservative estimate because many of the gasoline components have a higher vapor pressure than ethanol.

Fuel	Pollutant	Emission Factor	Emissions (lb/yr)
Gasoline	VOC	7.34 lb/1,000 gal	1,468
	TAP	50.0% VOC	734
	HAP	12.9% VOC	189*
E85	TAP	92.5% VOC	1,358*
	HAP	1.94% VOC	28
	Ethanol	85% VOC	1,248

* The most emissive TAP scenario is 100% E85 throughput. The most emissive HAP scenario is 100% gasoline throughput.

ADP Application CL-3232. The refueling facility at the Ross Complex was approved under ADP 05-2631. In the interim, emission factors have been updated and requirements for Stage II have changed. This permitting action will update the emission factors and requirements to reflect current BACT and SWCAA 491. In addition, BPA has chosen to reduce maximum allowable throughput from 600,000 gal/yr to 200,000 gal/yr in order to maintain compliance with new requirements established in SWCAA 491. ADP 05-2631 will be superseded by this action.

6.g Blast Room (*existing*). Potential emissions from Blast Room operations are calculated based on a discharge rate of 70,000 acfm, an outlet particulate matter concentration of 0.005 gr/scf, and 2,133 hours per year of operation (*back calculated from emission limit established in ADP 01-2340 with a particulate matter exhaust concentration of 0.005 gr/scf*). Annual emissions will be calculated from actual hours of operation using the same methodology.

Source	Exhaust (acfm)	Exhaust Conc. (gr/scf)	Operation (hr/yr)	$PM/PM_{10}/PM_{2.5}$ (lb/hr)	$PM/PM_{10}/PM_{2.5}$ (lb/yr)
Blast Room	70,000	0.005	2,133	3.0	6,400

6.h Large Paint Booth (*existing*). Potential emissions from spray coating operations are calculated using material balance methodology and SDS information for each individual coating product. 100% of the volatile material from coatings is assumed to be emitted to the ambient air. Particulate matter emissions are calculated based on coatings solids content, spray equipment transfer efficiency, and the particulate matter arrestance efficiency of the filtration media. Estimated emissions are equivalent to actual product usage from calendar year 2006 during which a single shift was operating, scaled to a three shift schedule. Annual emissions will be calculated from actual hours of operation using the same methodology.

Pollutant	Emissions (tpy)
Volatile organic compounds	14.18
Toxic air pollutants	10.52
Hazardous air pollutants	6.40

6.i Aluminum Brightener/Degreasing Tank (*existing*). Emissions from the Aluminum Brightener/Degreasing Tank are expected to be negligible if properly operated. The unit is vented at approximately 1,500 acfm. ADP 82-646 cites hydrofluoric acid and phosphoric acid emission test results of 4.00E-7 gr/scf and 8.7E-10 gr/scf respectively. Assuming these emission concentrations and 8,760 hours per year of operation, hydrofluoric acid and phosphoric acid emissions would be 0.045 pounds per year and 9.80E-5 pounds per year respectively.

6.j Tinning Tank (*existing*). Emissions from the Tinning Tank are expected to be negligible if properly operated. The unit is vented at 1,500 acfm. ADP 82-646 cites an expected maximum uncontrolled emission rate of hydrochloric acid and tin chloride of 1.3E-5 gr/scf (combined). At this emission concentrations and 8,760 hours per year of operation, combined hydrochloric acid and tin chloride emissions would be 1.5 pounds per year.

6.k Welding Operations (*existing*). Potential annual emissions from miscellaneous welding operations are calculated by doubling the amount of welding conducted in calendar year 2008 with E71T and E70S wire, and assuming 500 pounds of 811W wire could be used in a year. 198 pounds of 811W wire was used in 2008, but BPA believes up to 500 pounds could conceivably be used in any one year. The emission factors for the type 811W welding wire (a gas shielded flux core material) was calculated using the San Diego Air Pollution Control District recommended procedure for unspecified gas metal arc welding. Emission factors for E71T and E70S are from AP-41 Section 12.19 (1/95).

	Usage	Emission Factors (lb/1,000 lb)							
Type	lb/yr	Cr	Cr(VI)	Co	Mn	Ni	Pb	$PM_{10}/PM_{2.5}$	
811W	500	0.156	0.008	0.000	0.000	0.219	0.000	10.0	
E71T	1,584	0.002	0.000	0.001	0.662	0.004	0.000	12.2	
E70S	264	0.001	0.000	0.001	0.318	0.001	0.000	5.2	
					Emissions (lb/yr)				
Type		Cr	Cr(VI)	Co	Mn	Ni	Pb	$PM_{10}/PM_{2.5}$	
811W		0.078	0.004	0.000	0.000	0.109	0.000	5.000	
E71T		0.003	0.000	0.002	1.049	0.006	0.000	19.325	
E70S		0.000	0.000	0.000	0.084	0.000	0.000	1.373	
	Totals =	0.081	0.0041	0.002	1.13	0.12	0.00	25.7	lb/yr
	HAP/TAP =	0.081	0.0041	0.002	1.13	0.12	0.00	1.336	lb/yr

6.l Sander Stations (*existing*). Potential emissions from sander station operation are calculated from the rated discharge of each unit, a maximum emission concentration of 0.005 gr/dscf, and 8,760 hours per year of operation. All PM emissions are assumed to be $PM_{2.5}$. Most, or all, of the parts processed in the sander stations are made of aluminum so emission calculations assume that all emitted PM is aluminum.

Source	Exhaust Rate (cfm)	Exhaust Conc. (gr/dscf)	Hours of Operation	$PM/PM_{10}/PM_{2.5}$ (lb/hr)	$PM/PM_{10}/PM_{2.5}$ (lb/yr)
TB3060 Sander Station	2,500	0.005	8,760	0.11	939
TB3096 Sander Station	5,000	0.005	8,760	0.21	1,877
Aluminum (total)				0.32	2,816

6.m Powder Coating Oven (*new*). Emissions from powder coating operations are calculated from a rated oven heat input of 1.0 MMBtu/hr, 8,760 hours per year of operation, 2,000 lb/yr of powder throughput, and applicable emission factors for the oven burner. Emission factors for NO_X and CO correspond to 100 ppmv and 50 ppmv at 3% O_2, respectively. Other combustion emission factors are taken from EPA AP-42 §1.4 "Natural Gas Combustion" (3/98). All PM is assumed to be $PM_{2.5}$. Annual emissions will be calculated based on actual fuel consumption and powder coating throughput using the same methodology.

Powder coats are solid powders with no little or no inherent VOC content. However, some VOC emissions are emitted during the curing process due to thermal degradation of the material. Potential VOC emissions are estimated to be up to 5% of coating weight as referenced in the Emission Inventory Improvement Program document "Preferred and Alternative Methods for Estimating Air Emissions From Surface Coating Operation" (July 2001).

Powder Throughput = 2,000 lb/yr

Pollutant	Emission Factor (lb/MMBtu)	Emissions (lb/hr)	Emissions (lb/yr)	Emissions (tpy)
NO_X	0.1214	0.12	1,063	0.53
CO	0.0369	0.037	323	0.16
VOC (combustion)	0.0054	0.005	47	0.024
VOC (curing)	5%	--	100	0.05
SO_X as SO_2	5.88E-04	5.9E-04	5.2	0.003
PM (total)	0.0075	0.0075	65	0.033
PM_{10}	0.0075	0.0075	65	0.033
$PM_{2.5}$	0.0075	0.0075	65	0.033
Benzene	2.06E-06	2.1E-06	0.018	9.0E-06
Formaldehyde	7.35E-05	7.4E-05	0.64	3.2E-04
CO_2e	117	117.0	1,024,920	512

6.n Emissions Summary/Facility-wide Potential to Emit. Facility-wide potential to emit as calculated in the sections above is summarized below.

Pollutant	Potential Emissions (tpy)	Project Increase (tpy)
NO_X	8.91	1.25
CO	4.50	0.46
VOC	15.60	-3.05
SO_2	0.017	0.004
Lead	0.00	0.00
PM	4.87	0.06
PM_{10}	4.87	0.06
$PM_{2.5}$	4.87	0.06
TAP	12.61	-2.92
HAP	6.50	-0.02
CO_2e	1,478	653

Pollutant	CAS Number	Category	Facility-wide Emissions (lb/yr)	Project Increase (lb/yr)	WAC 173-460 SQER (lb/yr)
Benzene	71-43-2	HAP/TAP	0.02	0.018	20
Ethanol	64-17-5	TAP	1,248	0.0	43,748
Formaldehyde	50-00-0	HAP/TAP	4.15	0.64	20

7. REGULATIONS AND EMISSION STANDARDS

Regulations that have been used to evaluate the acceptability of the proposed facility and establish emission limits and control requirements include, but are not limited to, the regulations, codes, or requirements listed below.

7.a Title 40 Code of Federal Regulations Part 60 (40 CFR 60) Subpart GG "Standards of Performance for Stationary Gas Turbines" applies to each turbine with a heat input at peak load greater than or equal to 10.7 gigajoules per hour (10,000,000 Btu/hour) that was installed or modified after October 3, 1982. The turbines at this facility were installed prior to 1982 so this regulation is not applicable.

7.b 40 CFR 60 Subpart IIII "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines" applies to each compression ignition (CI) internal combustion engine (ICE) that commences construction after July 11, 2005 and is manufactured after April 1, 2006, or that is modified or reconstructed after July 11, 2005. The following engines are affected sources under this regulation:

- Building Z-992 Generation Engine A
- Building Z-992 Generation Engine B
- Technical Services Building Generator Engine A
- Technical Services Building Generator Engine B

7.c 40 CFR 63 Subpart YYYY "National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines" establishes HAP limits, testing, monitoring, recordkeeping and reporting requirements for turbines located at major HAP facilities. This facility is not a major HAP facility so this regulation is not applicable.

7.d 40 CFR 63 Subpart ZZZZ "National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines" establishes national emission limitations and operating limitations for HAP emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. The following engines are affected sources under this regulation:

- MultiQuip Generator Engine (existing stationary RICE)
- Warehouse Generator Engine (existing stationary RICE)
- Building Z-992 Generation Engine A (new stationary RICE)
- Building Z-992 Generation Engine B (new stationary RICE)
- Technical Services Building Generator Engine A (new stationary RICE)
- Technical Services Building Generator Engine B (new stationary RICE)

7.e 40 CFR 63 Subpart HHHHHH "National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources" establishes standards and work practices for all area sources engaged in paint stripping operations using methylene chloride, autobody refinishing operations, or spray coating of metal or plastic parts with coatings that contain chromium, lead, manganese, nickel, or cadmium (target HAPs). This facility does not spray coat metal parts with coatings that contain target HAPs so this regulation is not applicable.

7.f 40 CFR 63 Subpart XXXXXX "National Emissions Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories" establishes standards and work practices for dry abrasive blasting, machining, dry grinding and polishing, spray painting, and welding operations at area sources primarily engaged in one of nine selected metal fabrication and finishing source categories. The proposed facility is not primarily engaged in any of the selected metal fabrication and finishing source categories so this regulation is not applicable.

7.g Revised Code of Washington (RCW) 70A.15.2040 empowers any activated air pollution control authority to prepare and develop a comprehensive plan or plans for the prevention, abatement and control of air pollution within its jurisdiction. An air pollution control authority may issue such orders as may be necessary to effectuate the purposes of the Washington Clean Air Act and enforce the same by all appropriate administrative and judicial proceedings subject to the rights of appeal as provided in Chapter 62, Laws of 1970 ex. sess.

7.h RCW 70A.15.2210 provides for the inclusion of conditions of operation as are reasonably necessary to assure the maintenance of compliance with the applicable ordinances, resolutions, rules and regulations when issuing an Air Discharge Permit for installation and establishment of an air contaminant source.

7.i Washington Administrative Code (WAC) 173-460 "Controls for New Sources of Toxic Air Pollutants" requires Best Available Control Technology for toxic air pollutants (T-BACT), identification and quantification of emissions of toxic air pollutants and demonstration of protection of human health and safety.

7.j WAC 173-476 "Ambient Air Quality Standards" establishes ambient air quality standards for PM_{10}, $PM_{2.5}$, lead, sulfur dioxide, nitrogen dioxide, ozone, and carbon monoxide in the ambient air, which shall not be exceeded.

7.k SWCAA 400-040 "General Standards for Maximum Emissions" requires all new and existing sources and emission units to meet certain performance standards with respect to Reasonably Available Control Technology (RACT), visible emissions, fallout, fugitive emissions, odors, emissions detrimental to persons or property, sulfur dioxide, concealment and masking, and fugitive dust.

7.l SWCAA 400-050 "Emission Standards for Combustion and Incineration Units" requires that all provisions of SWCAA 400-040 be met and that no person shall cause or permit the emission of particulate matter from any combustion or incineration unit in excess of 0.23 grams per dry cubic meter (0.1 grains per dry standard cubic foot) of exhaust gas at standard conditions.

7.m SWCAA 400-060 "Emission Standards for General Process Units" prohibits particulate matter emissions from all new and existing process units in excess of 0.1 grains per dry standard cubic foot of exhaust gas.

7.n SWCAA 400-109 "Air Discharge Permit Applications" requires that an Air Discharge Permit application be submitted for all new installations, modifications, changes, or alterations to process and emission control equipment consistent with the definition of "new source". Sources wishing to modify existing permit terms may submit an Air Discharge Permit application to request such changes. An Air Discharge Permit must be issued, or written confirmation of exempt status must be received, before beginning any actual construction, or implementing any other modification, change, or alteration of existing equipment, processes, or permits.

7.o SWCAA 400-110 "New Source Review" requires that SWCAA issue an Air Discharge Permit in response to an Air Discharge Permit application prior to establishment of the new source, emission unit, or modification.

7.p SWCAA 400-111 "Requirements for Sources in a Maintenance Plan Area" requires that no approval to construct or alter an air contaminant source shall be granted unless it is evidenced that:

(1) The equipment or technology is designed and will be installed to operate without causing a violation of the applicable emission standards;
(2) Emissions will be minimized to the extent that the new source will not exceed emission levels or other requirements provided in the maintenance plan;
(3) Best Available Control Technology will be employed for all air contaminants to be emitted by the proposed equipment;
(4) The proposed equipment will not cause any ambient air quality standard to be exceeded; and
(5) If the proposed equipment or facility will emit any toxic air pollutant regulated under WAC 173-460, the proposed equipment and control measures will meet all the requirements of that Chapter.

8. RACT/BACT/BART/LAER/PSD/CAM DETERMINATIONS

The proposed equipment and control systems incorporate Best Available Control Technology (BACT) for the types and amounts of air contaminants emitted by the processes as described below:

New BACT Determinations

8.a BACT Determination – Emergency Generators. The use of a modern diesel engine design, limited hours of operation (testing, maintenance, and emergency use only), and ultra-low sulfur distillate fuel (less than 0.0015% sulfur by weight) has been determined to meet the requirements of BACT for emergency generators at this facility.

8.b BACT Determination – Powder Coating. The proposed use of process enclosure, high efficiency filtration, low sulfur fuel (natural gas), and proper combustion controls has been determined to meet the requirements of BACT for the type and quantity of pollutants emitted by powder coating operations at this facility.

Previous BACT Determinations

8.c BACT Determination – Sander Stations (*ADP 15-3141*). The proposed use of process enclosure, high efficiency filtration, and vertical dispersion of exhaust streams has been determined to meet BACT and T-BACT for the types and quantities of air contaminants emitted from sander stations at this facility.

8.d BACT Determination – Gasoline/E85 Refueling (*ADP 05-2631*). This facility will be permitted to dispense up to 600,000 gallons per year of gasoline and E85. Gasoline dispensing facilities in Clark County that dispense between 200,000 and 600,000 gallons of fuel per year are required to employ Stage I vapor recovery equipment as tested and approved by CARB. The existing gasoline dispensing tanks are equipped with balance 2-point Stage I vapor

recovery equipment. The new E85 tank is equipped with Stage I vapor recovery equipment approved by CARB Executive Order G-70-128 dated August 27, 1990.

Other Determinations

8.e Prevention of Significant Deterioration (PSD) Applicability Determination. The potential to emit of this facility is less than applicable PSD applicability thresholds. Likewise, this permitting action will not result in a potential increase in emissions equal to or greater than the PSD thresholds. Therefore, PSD review is not applicable to this action.

8.f Compliance Assurance Monitoring (CAM) Applicability Determination. CAM is not applicable to any emission unit at this facility because it is not a major source and is not required to obtain a Part 70 permit.

9. AMBIENT IMPACT ANALYSIS

9.a TAP Small Quantity Review. The incremental increases in TAP emissions associated with this permitting action are quantified in Section 6 of this Technical Support Document. All incremental increases in individual TAP emissions are less than the applicable small quantity emission rate (SQER) identified in WAC 173-460.

Conclusions

9.b Installation of emergency generators and a powder coating operation, as proposed in ADP Application CL-3232, will not cause the ambient air quality requirements of Title 40 Code of Federal Regulations (CFR) Part 50 "National Primary and Secondary Ambient Air Quality Standards" to be violated.

9.c Installation of emergency generators and a powder coating operation, as proposed in ADP Application CL-3232, will not cause the requirements of WAC 173-460 "Controls for New Sources of Toxic Air Pollutants" or WAC 173-476 "Ambient Air Quality Standards" to be violated.

9.d Installation of emergency generators and a powder coating operation, as proposed in ADP Application CL-3232, will not cause a violation of emission standards for sources as established under SWCAA General Regulations Sections 400-040 "General Standards for Maximum Emissions," 400-050 "Emission Standards for Combustion and Incineration Units," and 400-060 "Emission Standards for General Process Units."

10. DISCUSSION OF APPROVAL CONDITIONS

SWCAA has made a determination to issue ADP 23-3587 in response to ADP Application CL-3232. ADP 23-3587 contains approval requirements deemed necessary to assure compliance with applicable regulations and emission standards as discussed below.

10.a Supersession of Previous Permits. ADP 23-3587 supersedes ADP 15-3141 and ADP 05-2631 in their entirety.

10.b General Basis. Permit requirements for equipment affected by this permitting action incorporate the operating schemes proposed by the applicant in ADP Application CL-3232. Permit requirements established by this action are intended to implement BACT, minimize emissions, and assure compliance with applicable requirements on a continuous basis. Emission limits for approved equipment are based on the maximum potential emissions calculated in Section 6 of this Technical Support Document.

10.c Monitoring and Recordkeeping Requirements. ADP 23-3587 establishes monitoring and recordkeeping requirements sufficient to document compliance with applicable emission limits, ensure proper operation of approved equipment and provide for compliance with generally applicable requirements. Specific recordkeeping requirements are established for hours of operation, material consumption, and fuel throughput.

10.d Reporting Requirements. ADP 23-3587 establishes general reporting requirements for annual air emissions, upset conditions and excess emissions. Specific reporting requirements are established for hours of operation, material consumption, and fuel throughput. Reports are to be submitted on an annual basis.

10.e Reciprocating Diesel Generator Engines. In previous permitting actions, the fuel evaluated for use in diesel generator engines (*Building Z-992 Generator Engine A, Building Z-992 Generator Engine B, Warehouse Emergency Generator Engine*) was road-grade diesel. Operation on other, potentially dirtier, fuels was prohibited. To simplify compliance, BPA indicated that this same limitation could be applied to the MultiQuip Power Generator Set Engine, which at the time was allowed to use diesel containing up to 500 ppm sulfur. At this time, all reciprocating diesel generator engines are required to use "#2 diesel or better." "or better" includes road-grade diesel fuel with a lower sulfur content, biodiesel, and mixtures of biodiesel and road-grade diesel.

Operation of each reciprocating diesel engine for readiness testing and maintenance purposes is limited to 100 hours per year. This amount of operation is consistent with the 40 CFR 60 Subpart IIII limitation for new emergency engines, and assures that emissions are below levels where add-on control equipment would be required to meet the requirements of BACT.

10.f Sander Stations. Review of the sander stations assumed continuous operation (8,760 hr/yr). Actual operation is expected to be far less. Likewise, the review assumed that all processed parts were made of aluminum, which may not be true of the actual part mix. Exhausts streams are required to have a vertical orientation, and may not utilize a rain-cap or other device that interferes with vertical dispersion.

10.g Powder Coating Operations. Powder application is conducted in an enclosed booth that recirculates air inside the building. Particulate emissions to the ambient atmosphere are assumed to be negligible. The powder curing oven is operated in accordance with manufacturer's specifications. Proper combustion controls and burner maintenance are expected to minimize combustion emissions. Visible emissions from the oven are limited to 0% opacity and must be discharged vertically.

10.h Requirements for Unmodified Emission Units. Permit requirements for existing emission units not affected by ADP Application CL-3232 are carried forward unchanged from ADP 15-3141.

11. START-UP AND SHUTDOWN/ALTERNATIVE OPERATING SCENARIOS/POLLUTION PREVENTION

11.a Start-up and Shutdown Provisions. Pursuant to SWCAA 400-081 "Start-up and Shutdown", technology based emission standards and control technology determinations shall take into consideration the physical and operational ability of a source to comply with the applicable standards during start-up or shutdown. Where it is determined that a source is not capable of achieving continuous compliance with an emission standard during start-up or shutdown, SWCAA shall include appropriate emission limitations, operating parameters, or other criteria to regulate performance of the source during start-up or shutdown.

Emergency Generator Engines. Diesel engines may exhibit higher than normal opacity during startup. Accordingly, the visual emissions limit for the diesel engine power unit is not applicable during the startup period defined in the permit. General opacity standards continue to apply.

11.b Alternate Operating Scenarios. SWCAA conducted a review of alternate operating scenarios applicable to equipment affected by this permitting action. The permittee did not propose or identify any applicable alternate operating scenarios. Therefore, none were included in the permit requirements.

11.c Pollution Prevention Measures. SWCAA conducted a review of possible pollution prevention measures for the facility. No pollution prevention measures were identified by either the permittee or SWCAA separate or in addition to those measures required under BACT considerations. Therefore, none were included in the permit requirements.

12. EMISSION MONITORING AND TESTING

There are no formal emission monitoring or testing requirements for this facility.

13. FACILITY HISTORY

13.a Previous Permitting Actions. SWCAA has previously issued the following Permits for this facility:

Permit Number	Application Number	Date	Purpose
15-3141	CL-2037	6/15/2015	Installation and operation of Building Sander Station upgrade with blower tables and particulate filters - 5,000 acfm.
05-2631	CL-1710	9/8/2005	Installation of an E85 refueling station.
Superseded/Obsolete Permits			
09-2897	CL-1888	10/15/2009	Installation of diesel-fired emergency generator set (Warehouse Generator) and approval of existing unpermitted welding operations. Superseded by ADP 15-3141.
07-2731	CL-1782	7/10/2007	Installation of two new diesel-fired emergency generator sets (Building Z-992 Generator A, Building Z-992 Generator B) and consolidation of permit terms. Superseded by ADP 09-2897.
01-2336R1	CL-1544	12/17/2001	Installation of a 475 kW MultiQuip Power emergency generator set powered by a 658 hp diesel engine. This equipment was installed instead of the 173 kW generator set approved by ADP 01-2336. Superseded by ADP 07-2731.
01-2340	CL-1503	3/20/2001	Installation of a new Clemco Industries Blast Room to replace the existing blasting room. Superseded by ADP 07-2731.
01-2336	CL-1499	1/11/2001	Installation of a 173 kW MultiQuip Power emergency generator set powered by a 273 hp diesel engine. Obsolete - This equipment was never installed.
95-1780	CL-1156	6/9/1995	Approved installation of a Steelcraft cartridge-style baghouse to control PM emissions generated during maintenance welding operations. Obsolete - This equipment was never installed.
82-646	CL-475	5/3/1982	Installation of Aluminum Brightener/Degreasing Tank and Tinning Tank. Superseded by ADP 07-2731.
78-346	CL-330	6/8/1978	Installation of a 5,000 cfm Sternvent baghouse to control PM emissions from an existing sandblasting room. Obsolete – This equipment was replaced by the Clemco blasting room permitted by ADP 01-2340.

13.b Compliance History.

NOV Number	Date	Violation
10623	6/30/2022	Installation and operation of unpermitted equipment.

14. PUBLIC INVOLVEMENT OPPORTUNITY

14.a Public Notice for ADP Application CL-3232. Public notice for ADP Application CL-3232 was published on the SWCAA internet website for a minimum of (15) days beginning on April 19, 2023.

14.b Public/Applicant Comment for ADP Application CL-3232. SWCAA did not receive specific comments, a comment period request or any other inquiry from the public regarding this ADP application. Therefore no public comment period was provided for this permitting action.

14.c State Environmental Policy Act. BPA submitted a complete SEPA checklist in conjunction with ADP Application CL-3232. After reviewing the checklist, SWCAA has made a Determination of Non Significance (DNS 23-026) concurrent with issuance of ADP 23-3587.